As an example, $\hat{p}(x) = 2x$, on [0,4], and $b = 2$ so that we need to find $2^b = 4$ grid points.

Here, $\hat{p}(x)$ is the estimated probability distribution function and b is the number of bits allocated. *See* Specification, page 14, lines 1-5. In this example, there are boundary points c(0), c(1), c(2), c(3), where c(0)=0, c(3)= 4, and c(1), c(2) are undetermined boundary points.

Then $\int_0^4 \hat{p}(x)dx = \int_0^4 2x \cdot dx = x^2 \Big|_{x=0}^{x=4} = 16$.

One wants to find c(0), c(1), c(2), c(3), such that

$\int_{c(n)}^{c(1)} \hat{p}(x)dx = \int_{c(1)}^{c(2)} \hat{p}(x)dx = \int_{c(2)}^{c(3)} \hat{p}(x)dx = A$. In other words, the probability distribution function is segmented into a plurality of grids to make areas covered by each grid equal. *See* Specification, page 14, lines 1-3.

Since $\int_{c(0)}^{c(3)} \hat{p}(x)dx = \int_0^{(4)} 2xdx = 16 = 3A$, $A = \dfrac{16}{3}$.

Now $\int_{c(0)=0}^{c(1)} \hat{p}(x)dx = \int_0^{c(1)} 2xdx = x^2 \Big|_o^{c(1)} = c(1)^2 = \dfrac{16}{3}$, $\therefore c(1) = \dfrac{4}{\sqrt{3}}$.

Further, $\int_{c(1)}^{c(2)} \hat{p}(x)dx = \int_{\frac{4}{\sqrt{3}}}^{c(2)} 2xdx = x^2 \Big|_{\frac{4}{\sqrt{3}}}^{c(2)} = c(2)^2 - \left(\dfrac{4}{\sqrt{3}}\right)^2 = \dfrac{16}{3} \Rightarrow c(2)^2 = \dfrac{2 \cdot 16}{3}$,

$\therefore c(2) = \sqrt{\dfrac{2}{3}} 4$.

Finally, $\int_{\sqrt{\frac{2}{3}}4}^{c(3)=4} \hat{p}(x)dx = 4^2 - \dfrac{2}{3} \cdot 16 = \dfrac{16}{3}$ to check that (c2), c(3) is right).

Therefore, $c(0) = 0, c(1) = \dfrac{4}{\sqrt{3}}, c(2) = 4 \cdot \sqrt{\dfrac{2}{3}}, c(3) = 4$, i.e., the cumulative probability

between c(i) and c(i+1) are all the same, i.e., uniform, with the value of 16/3. In the

Specification, Equation 12 on page 14 allows one skilled in the art to divide the marginal

distribution into a plurality of grids in which a probability of disposing the feature vector data in

each grid is uniform, in the manner shown above.

Thus, Applicants request the Examiner to withdraw the rejection of claims 2-16 under

§ 112, first paragraph.

In view of the above, reconsideration and allowance of this application are now believed

to be in order, and such actions are hereby solicited. If any points remain in issue which the

Examiner feels may be best resolved through a personal or telephone interview, the Examiner is

kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue

Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any

overpayments to said Deposit Account.

Respectfully submitted,

Seok-Won Stuart Lee*
*Granted limited recognition under
37 C.F.R. § 10.9(b), as shown in a copy of
the same filed on April 16, 2004, at the
U.S.P.T.O.

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Date: September 16, 2004